

REMARKS

Applicant confirms the election of Group I (Claims 1-12). Further, Applicant reserves the right to file the non-elected claims in a divisional application.

Applicant has amended the title to better indicate the invention. The amended title is "METHOD FOR FORMING COMPOSITE ARTICLES".

As requested by the Examiner, Applicant has amended the specification to include an abstract. A separate sheet with the abstract is included with this Amendment.

The amendment to specification on page 9, lines 24-27 has support in Claim 7 as originally filed. Support for the claim amendments are found throughout the specification and claims as originally filed.

Rejection of Claims 1-12 under 35 U.S.C. § 112, Second Paragraph

Claims 5 and 10 are rejected for containing improper Markus terminology. Claims 5 and 10 have been amended as recommended by the Examiner. Applicant believes the claims now meet the requirements of section 112, second paragraph.

Rejection of Claims 1-12 under 35 U.S.C. § 103(a)

Claims 1-12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6,077,464, issued to Murdie on June 20, 2000 (hereinafter "Murdie").

Claim 1 is directed to immersing a reticulated foam skeleton in a liquid precursor. The skeleton is heated sufficiently to pyrolyze the liquid precursor and cause a product of the pyrolyzed liquid precursor to deposit on the reticulated foam skeleton. This is in accordance with the rapid densification process disclosed beginning at page 5, line 10 of the specification. Murdie fails to teach or suggest heating a foam skeleton, which is an open lattice forming a network of three-dimensionally interconnected cells, immersed in a liquid precursor so as to pyrolyze the liquid precursor and leave a pyrolysis product deposited on the skeleton. There is no suggestion in Murdie that fibers are interchangeable with a foam skeleton.

isotropic, performance of a frictional surface comprising a foam of this invention is likely to be more uniform and consistent as the friction surface wears. Moreover, distortion from machining is reduced due to the isotropic structure, thereby promoting flatness and parallelism in machined friction surfaces. The methods of this invention also can be used to produce exceptionally dense structures with over 50% solid density, while retaining open porosity.

Though a carbon skeleton generally has low strength relative to carbon fibers, the matrix that is deposited imparts sufficient structural integrity where the open porosity and isotropy of the carbon skeleton offer an excellent structure for wet frictional applications. The distribution of pores therethrough is substantially uniform and provide an interlaced network of conduits through which hydraulic fluid can flow. Further, the nature of this structure also allows extremely high densification levels (e.g., up to 90%), while retaining interconnected pores throughout the structure. Fibers do not provide such an unexpected advantage. The lack of strength in the carbon skeleton is made up for by the pyrolytic carbon or other deposit which provides the foam with the structural reinforcement that is needed for applications, such as wet friction.

Further, Murdie does not provide motivation for one of ordinary skill to have provided the recited solid densities. The Examiner's comments that one would have reasonably expected that the claimed densities could have been achieved is merely hindsight reconstruction, the mere fact that it may have been possible is alone insufficient to establish obviousness.

Therefore, the claimed invention is not obvious in view of the cited prior art.

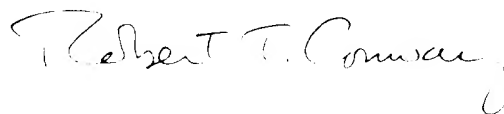
CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If

the Examiner believes that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH &
REYNOLDS, P.C.

A handwritten signature in cursive script, reading "Robert T. Conway".

Robert T. Conway
Registration No. 33,859
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Dated: *September 12, 2003*
Concord, Massachusetts 01742-9133